

WHAT IS CLAIMED IS:

1. An optical scanner comprising:
 - a semiconductor laser;
 - a circuit board on which the semiconductor laser is mounted;
 - a deflector for deflecting a laser beam emitted from the semiconductor laser;
 - an image forming optical system for forming an image on a photosensitive member by the laser beam deflected by the deflector; and
 - an optical box having an attachment face to which the circuit board is attached,wherein an outgoing direction of the laser beam of the semiconductor laser is along the circuit board, and the optical axis of the semiconductor laser is adjusted by moving the circuit board along the attachment face.
2. An optical scanner according to claim 1, wherein an optical axis adjustment in an optical axis direction of the laser beam and a main scanning direction is made by moving the circuit board along the attachment face.
3. An optical scanner according to claim 1, wherein an optical axis adjustment of an outgoing angle in a plane

including the main scanning direction of the laser beam is made by moving the circuit board along the attachment face.

4. An optical scanner according to claim 1, wherein the deflector includes a rotary polygon mirror.

5. An optical scanner according to claim 1, wherein the optical box includes a light source, and the light source comprises the semiconductor laser, the circuit board, an elastic member for elastically holding the semiconductor laser, and an angle member for making an adjustment of one direction of the optical axis of an outgoing beam from the semiconductor laser.

6. An optical scanner according to claim 2, wherein an optical axis adjustment in a sub scanning direction of the laser beam is made by moving the semiconductor laser with respect to the circuit board.

7. An optical scanner according to claim 3, wherein the semiconductor includes three leads which are disposed within one plane.

8. An optical scanner according to claim 4, wherein

the semiconductor laser is disposed within a center portion in a direction of the circuit board.

9. An optical scanner according to claim 4, wherein the semiconductor laser is disposed at an end in a direction of the circuit board.

10. An optical scanner according to claim 5, wherein the semiconductor laser includes a light emitting device exposed to the outside, a set of lead frames held by the elastic member, and three leads.

11. An optical scanner according to claim 5, wherein the optical box includes a base face, two bosses for attaching the circuit board are provided for the base face, one face of the boss can be made parallel to the main scanning face and, by screwing the circuit board to the bosses, the circuit board can be disposed in parallel with the main scanning face.

12. An optical scanner according to claim 5, wherein the semiconductor laser does not include a cover glass of a light beam outgoing window, and the semiconductor laser can be held by the elastic member via an LD socket.

13. An optical scanner according to claim 10, wherein the circuit board includes one face and a solder face, a concave for attaching the semiconductor laser is formed in the circuit board, and by soldering the three leads of the semiconductor laser housed in the concave to the solder face, the main scanning direction of the outgoing beam of the laser are made parallel with the one face of the circuit board.

14. An optical scanner according to claim 10, wherein the elastic member is plate shaped and includes, in its center, a pair of tongue pieces formed by bending and a pressing piece for sandwiching the lead frame of the semiconductor laser in cooperation with the tongue pieces.

15. An optical scanner according to claim 11, wherein the circuit board includes an attaching portion for an adjusting jig and attaching the adjusting jig to the attaching portion enables the adjusting jig and the light source to be movable integrally.

16. An optical scanner according to claim 12, wherein the elastic member includes a center portion, a pair of side portions, at least one bridge portion for

connecting the center portion and the side portions, a through hole for holding the LD socket is formed in the center portion, and the bridge portion is elastically deformable.

17. An optical scanner according to claim 13, wherein the semiconductor laser is housed in the circuit board for arranging a sub scanning direction of the outgoing beam of the laser to be perpendicular to the one face of the circuit board.

18. An optical scanner according to claim 14, wherein the angle member includes a center portion, and a pair of contact portions formed by bending both ends of the center portion and the optical scanner further comprises an adjusting screw to be screwed in the center portion.

19. An optical scanner according to claim 14, wherein the pressing piece includes a supporting portion, a horizontal portion bent from the tip of the supporting portion at a right angle, and a pair of pressing portions each obtained by bending each of both ends of a wide portion at one end of the horizontal portion, each of the pressing portions is shaped semicircular, and an arc of each of

the pressing portions is disposed with a space from the supporting portion of the tongue piece.

20. An optical scanner according to claim 18, wherein a hole is formed in each of the contact portions and screwing the circuit board and the elastic member enables the circuit board, the elastic member and the angle member to be assembled integrally.

21. An optical scanner according to claim 18, wherein the adjusting screw includes a head portion and a tip, and integral assembling of the circuit board, the elastic member and the angle member enables the tip of the adjusting screw to come into contact with one face of the pressing piece of the elastic member.

22. An optical scanner according to claim 19, wherein a space in one direction of the supporting portions of the pair of tongue pieces and a space in said one direction of said pair of pressing portions of the pressing piece is set to be slightly larger than a width of an outer frame of the semiconductor laser.